

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No. 10/083,688
Attorney Docket No. Q68731

REMARKS

Claims 1-6 have been examined. New claims 7-17 are added. Therefore, claims 1-17 are all the claims pending in the application.

I. Drawings

The Examiner objects to Figure 7. Applicant submits herewith a Request for Approval of Proposed Drawing Corrections, including corrected Figure 7, which is amended to incorporate the legend "Prior Art", and respectfully requests approval of the corrected drawings. In addition, Applicant submits herewith a set of Corrected Drawings, including the Proposed Drawing Corrections and requests the Examiner to acknowledge receipt and enter the Corrected Drawings.

II. Objections to the Specification

The Examiner objects to the specification. In particular, the Examiner alleges that the Summary of the Invention is a verbatim copy of the claims and requests amendment of the specification. Applicant respectfully submits that the Summary of the Invention is not a verbatim copy of the claims. In fact, Applicant's Summary of the Invention includes additional explanation of exemplary embodiments of the invention, together with recitations of the exemplary objects of the invention. Moreover, 37 C.F.R. § 1.73 (see also, MPEP 608.01(e)) requires that the Summary of the Invention be commensurate with the invention as claimed and any object recited should be that of the invention as claimed. Applicant submits that the present specification is written in accordance with the requirements as outlined in the MPEP 608.01(e)

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and U.S. patent practice. Therefore, Applicant believes that amendment of the specification is not necessary at this time.

III. Claim Objections

The Examiner objects to claims 1 and 4. Applicant submits that claims 1 and 4 have been amended, that these amendments obviate the Examiner's objections, and therefore, that these objections should be withdrawn. In addition, Applicant submits that claim 1 is being amended merely to correct grammatical errors and does not narrow the scope of the claims. Further, claim 4 is being amended merely to properly depend from claim 3.

IV. Anticipation Rejections

The Examiner rejects claim 1 under 35 U.S.C. § 102(b) as being anticipated by Urushibata et al. (U.S. Patent No. 4,963,699). For the following reasons, Applicant traverses this rejection.

Claim 1 defines a new and unique combination of elements which form a relay connector for connecting wires to a flat circuit member having a plurality of conductors. Claim 1 recites, *inter alia*, a plurality of electrical connection terminals each including a pair of piercing portions to pierce the conductor of the flat circuit member. That is, in the exemplary embodiment shown in Figure 6, the piercing portions 15c pierce not only the flexible insulating base member 21b of the flat circuit member 21, but additionally, the piercing portions 15c pierce the conductor 21a of the flat circuit member 21. Thus, the conductors 21a of the flat circuit member 21 are electrically and mechanically connected to the piercing portions 15c of the respective electrical

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connection terminals 15 at one time (see page 13, second paragraph). Applicant submits that Urushibata neither discloses, teaches, nor suggests at least this recitation.

Contrary to the claimed invention, Urushibata discloses that the spring portion crimpable portion 3 penetrates the coating of the flat type electric wire 5 and is bent so as to crimp spring portions 2 against spring portion 2' (see col. 3, lines 43-47). That is, the crimpable portion 3 does not pierce the electric wire 5 (i.e., the conductor). Instead, the crimpable portion 3, which is formed at the end of the crimp spring portion 2, pierces only the coating of the electric wire 5 and is bent around the spring portion 2', thereby sandwiching the coating of the electric wire 5 between the spring portion 2 and spring portion 2'. Thus, the connector terminal 10 is pressingly attached to the flat type electric wire 5 together with a part of the coating (see col. 3, lines 47-49). In fact, the electrical connection is made by stripping the electric wire 5 at one end to form an exposed portion of the rectangular conductor 7 and sandwiching the exposed portion of the rectangular conductor 7 between the spring portions 2 and 2'. Spot welding or the application of solder is necessarily performed between the top end portion of projecting portion 4 and rectangular conductor 7 to securely connect terminal 10 and rectangular conductor 7 together (see col. 3, lines 49-54).

Therefore, since Urushibata discloses that the crimpable portion 3 only pierces the coating of the electric wire 5 and not the rectangular conductor 7, Urushibata neither discloses, teaches, nor suggests all of the recitations of claim 1, and thus, the rejection of claim 1 should be withdrawn.

V. Obviousness Rejections

Claims 2 and 6:

The Examiner rejects claims 2 and 6 under 35 U.S.C. § 103(a) as being obvious over Urushibata in view of Nagai (U.S. Patent No. 6,394,836). Applicant submits that the Nagai reference and the present application were, at the time the invention was made, owned by, or subject to an obligation of assignment to Yazaki Corporation. Therefore, the Nagai reference does not qualify as prior art and should be removed. Thus, the obviousness rejection of claims 2 and 6 should be withdrawn.

Claim 3:

In addition, the Examiner rejects claim 3 under 35 U.S.C. § 103(a) as being obvious over Urushibata in view of Kinkaid et al. (U.S. Patent No. 4,082,402). For the following reasons, Applicant traverses this rejection.

As set forth above, Urushibata neither discloses, teaches, nor suggests at least a pair of piercing portions that pierce the conductor of the flat circuit member, as claimed. In addition, Applicant submits that Kinkaid does not make up for the deficiencies of Urushibata. For example, contrary to the claimed invention, Kinkaid discloses merely that the teeth tips 4a and 6a penetrate the insulation jacket 30, not the conductor 28 (see Figure 13; see also col. 7, lines 60-64). In fact, Kinkaid specifically teaches away from penetrating the conductor 28. For example, Kinkaid discloses that the ideal dimension allows penetration of the teeth tips through the insulation jacket, while at the same time preventing penetration of the teeth tips into the conductor 28 (see col. 7, line 66 to col. 8, line 3). That is, the teeth tips 4a and 6a penetrate

through the insulation jacket 30, but not through the conductor 28 (see col. 8, lines 3-6). The teeth tips 4a and 6a merely penetrate the insulation jacket 30 and are bent over and pressed against the conductor 28 to form the electrical connection, as shown in Figure 13.

Accordingly, Kinkaid does not make up for the deficiencies of Urushibata. Moreover, since Kinkaid teaches away from the claimed invention, a person of ordinary skill in the art would not have motivated to combine and modify Urushibata and Kinkaid to arrive at the claimed combination. Therefore, Applicant submits that claim 3 is not obvious over the combination of Urushibata and Kinkaid and the rejection of claim 3 should be withdrawn.

Claims 4 and 5:

Further, the Examiner rejects claims 4 and 5 under 35 U.S.C. § 103(a) as being obvious over Urushibata in view of Kinkaid, and further in view of Rahrig et al. (U.S. Patent No. 4,690,478). For the following reasons, Applicant traverses this rejection.

Applicant submits that Rahrig does not make up for the deficiencies of Urushibata and Kinkaid. For example, Rahrig discloses a first pair of jaws 46 which grippingly engage the insulation on the conductor wire 44 and a second pair of jaws 48 that are in electrical and mechanical contact with the electrically conductive center core of the conductor wire 44 (see col. 6, lines 13-21). However, Rahrig is completely silent with respect to whether the jaws 46 or 48 pierce the conductive center core of the conductor wire 44. Moreover, since the conductor wire 44 is rounded conductor wire, piercing the wire 44 with the jaws 46 and 48 would cause the rounded wire to split and fray.

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Therefore, for at least these reasons, Rahrig does not make up for the deficiencies of Urushibata and Kinkaid, and therefore, the rejection of claims 4 and 5 should be withdrawn.

VI. New Claims:

Applicant add new claims 7-17 to more completely define the features of Applicant's invention in varying degrees of scope. Applicant submits that claims 7-17 also are allowable over the cited references for at least reasons analogous to the reasons set forth with respect to claims 1-6 above.

Moreover, Applicant submits that new claims 7-17 are additionally and independently patentable over the cited references at least by virtue of the additional features recited therein.

For example, claim 17 recites, *inter alia*, "wherein a width between the pair of piercing portions is smaller than a width of each of the plurality of conductors." Applicant submits that Urushibata fails to disclose this feature. On the contrary, Urushibata discloses a pair of piercing portions 3 formed such that they do not pierce a rectangular conductor 7 of a flat type electric wire 5, and therefore, the width between the pair of piercing portions 3 is larger than that of the rectangular conductor 7 (see col. 3, lines 35-37, of Urushibata). Therefore, claim 17 is additionally and separately patentable over the applied references and should be in condition for allowance.


In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

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The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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APPENDIX
VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

The claims are amended as follows:

1. (Amended) A relay connector for connecting wires to a flat circuit member having a plurality of conductors, the relay connector comprising:

a plurality of electrical connection terminals, each including at its rear end portion a wire connection portion to which the wire is connectable, and at its front end portion a pair of piercing portions to pierce the conductor of the flat circuit member; and

an [a] insulating housing for receiving and holding the plurality of electrical connection terminals at an [a] interval corresponding to an arrangement pitch of the plurality of conductors of the flat circuit member,

wherein each pair [the pairs] of piercing portions pierces [are caused to pierce] the plurality of conductors at one time and is [are] bent back, respectively.

4. (Amended) The relay connector according to claim 3 [2], wherein

each of the plurality of terminal receiving grooves includes a retaining projection engaged with the electrical connection terminal to position the electrical connection terminal in an axial direction of the electrical connection terminal.

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6. (Amended) The relay connector according to claim 1, wherein each pair [the pairs] of piercing portions projects forwardly from the insulating housing when the plurality of electrical connection terminals are received in the insulating housing.

Claims 7-17 are added as new claims.